

1    **Psoriasis Formulation and Method of Preparation**

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3    This invention relates to formulations which can be used  
4    in the treatment of dermatological disorders, such as  
5    psoriasis. The current invention also relates to a  
6    method of preparation that is more acceptable for use  
7    than many current treatments.

8

9    The term dermatological disorders covers a wide range of  
10   disorders, such as psoriasis and eczema. These disorders  
11   affect a large number of people. Psoriasis is a chronic  
12   recurring skin disease, the scope of which can vary  
13   considerably from mild outbreaks, to severe cases.

14

15   The underlying problem of psoriasis is currently thought  
16   to be that new skin cells are produced too quickly, so  
17   that the old skin cells have not had time to die off and  
18   be removed. The resulting overproduction of skin cells  
19   is red and raised patches on the skin.

20

21   Various treatments have been suggested for psoriasis. In  
22   particular, many sufferers find that coal tar has a  
23   particularly beneficial effect and improves many of the

1 symptoms of psoriasis. Unfortunately, although coal tar  
2 has been found to be effective against the symptoms of  
3 psoriasis in many patients, as a substance coal tar is  
4 not the most user friendly. Coal tar has a very pungent  
5 smell and has a black colour which stains both clothing  
6 and bed linen. This can be very off-putting for many  
7 psoriasis sufferers and is generally inconvenient for  
8 regular use.

9  
10 It can therefore be seen that it would be beneficial to  
11 provide a psoriasis treatment which contains coal tar,  
12 but which is formulated in a manner which is appropriate  
13 for regular use.

14  
15 It is an object of the present invention to provide a  
16 psoriasis treatment which comprises coal tar.

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18 A further object of the present invention is to provide a  
19 psoriasis treatment in a formulation which does not stain  
20 clothes and is not unpleasant smelling.

21  
22 A yet further object of the present invention is to  
23 provide a psoriasis treatment in a formulation that can  
24 be easily applied.

25  
26 According to a first aspect of the present invention,  
27 there is provided a method of preparing a composition for  
28 the treatment of dermatological disorders, wherein coal  
29 tar is filtered to remove impurities by filter  
30 compression.

31  
32 Preferably zinc pyrithione is incorporated into the  
33 composition.

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2 Preferably the coal tar is filtered by being fed through  
3 a compressed charcoal filter.

4

5 Most preferably the coal tar is fed through the filter at  
6 17 to 19 psi.

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8 Most preferably the coal tar is fed through the filter at  
9 18 psi.

10

11 Preferably compressed air is used to force the coal tar  
12 through the filter.

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14 Preferably the coal tar is left in the filter system for  
15 8 hours.

16

17 Preferably the fluid that has been passed through the  
18 filter is boiled.

19

20 Most preferably the fluid is boiled for 5 minutes.

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22 Preferably the boiled, filtered fluid is allowed to cool  
23 to room temperature.

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25 Most preferably the top layer of the boiled, filtered  
26 fluid is refiltered.

27

28 Optionally, refiltering is through a nylon mesh.

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30 Preferably a surfactant is added to the formulation.

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32 Preferably the surfactant is an ionic surfactant.

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1 Most preferably the surfactant is sodium lauryl sulphate.  
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3 Preferably a carrier is added to the formulation.  
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5 Most preferably multiple carriers are added to the  
6 formulation.  
7  
8 Optionally a carrier may be isopropyl myristate.  
9  
10 A further option is that a carrier may be ethyl alcohol.  
11  
12 Preferably the formulation is placed in a spray or  
13 aerosol container.  
14  
15 Preferably a mild steroid is added to the formulation.  
16  
17 Preferably the mild steroid is 0.05% dipropionate.  
18  
19 According to a second aspect of the present invention,  
20 there is provided a composition for the treatment of  
21 dermatological disorders, comprising:  
22  
23 • coal tar;  
24 • zinc pyrithione;  
25 • one or more surfactants; and  
26 • one or more carriers  
27  
28 Preferably the dermatological disorder is psoriasis.  
29  
30 Preferably the composition also contains allantoin.  
31  
32 Preferably the surfactant is an ionic surfactant.  
33

1 Most preferably the surfactant is sodium lauryl sulphate.

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3 Optionally a carrier may be isopropyl myristate.

4

5 A further option is that a carrier may be ethyl alcohol.

6

7 Preferably the composition will also comprise an anti -  
8 fungal agent.

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10 Preferably the anti-fungal agent is undecylenic acid.

11

12 Preferably the composition formulation comprises the  
13 following ingredients:

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- 15 • zinc pyrithione;
- 16 • alcoholic extract of coal tar;
- 17 • allantoin;
- 18 • sodium lauryl sulphate;
- 19 • isopropyl myristate;
- 20 • ethyl alcohol; and
- 21 • undecylenic acid

22

23 Optionally the composition formulation comprises a mild  
24 steroid.

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26 Preferably the mild steroid is dipropionate.

27

28 Preferably the mild steroid is 0.05% dipropionate.

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30 Preferably the composition comprises the following  
31 ingredients in the following amounts:

32

- 33 • zinc pyrithione 0.20%

1	•	alcoholic extract of coal tar	0.25%
2	•	allantoin	0.25%
3	•	sodium lauryl sulphate	0.10%
4	•	isopropyl myristate	49.45%
5	•	ethyl alcohol	49.45%
6	•	undecylenic acid	0.30%

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8 Preferably the composition is provided in a spray form.

9

10 Alternatively, the composition is provided in an aerosol  
11 form.

12

13 In order to provide a better understanding of the present  
14 invention, embodiments will now be described by way of  
15 example only, and with reference to the following Figure:

16

17 Figure 1 shows a charcoal filter system for use according  
18 to the first aspect of the present invention.

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20 Coal tar, when untreated, has a very pungent smell and is  
21 black in colour. The black colouring will stain clothing  
22 and bed linen on contact.

23

24 In order to produce an acceptable formulation for use in  
25 treating psoriasis or other dermatological disorders,  
26 coal tar is filtered in order to eradicate the smell and  
27 remove many of the impurities which result in staining.

28

29 In the preferred embodiment, crude coal tar is mixed with  
30 2%sd alcohol (which acts as a thinner and is poured into  
31 a charcoal filter system 1 via the coal tar input 2.

32 Clean, compressed air is then applied via the air input 3  
33 at 18 psi (which can be varied between 17 to 19 psi).

1

2 The charcoal filter system 1 comprises a fine mesh gauze  
3 filter 4 and a charcoal filter 5 which the coal tar  
4 mixture is pushed through into the catch tank 6. It is  
5 worth noting that too much pressure forces charcoal  
6 through the system and too little does not push the coal  
7 tar mixture through.

8

9 The system 1 is left in place overnight with the  
10 compressed air still in place. In the preferred  
11 embodiment, the system is left for approximately 8 hours.  
12 The filtered fluid is then taken from the catch tank 6  
13 via the exit flow tap 7 and is boiled (in the preferred  
14 embodiment it is boiled for 5 minutes) and left to  
15 completely cool to room temperature. The fluid now has a  
16 scum on top which is filtered through a nylon mesh to  
17 give a clear, completely odourless liquid which does not  
18 stain materials.

19

20 A surfactant and a carrier is then added to make the  
21 formulation completely soluble. In the preferred  
22 embodiment, the surfactant is an ionic surfactant, sodium  
23 lauryl sulphate. Multiple carriers are used, and in the  
24 preferred embodiment, these are isopropyl myristate and  
25 ethyl alcohol. Zinc pyrithione is also added to the  
26 formulation, which increases the effectiveness of the  
27 formulation to a previously unexpected degree. Allantoin  
28 is also added to the formulation.

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30 In the preferred embodiment, an anti-fungal agent is also  
31 added to the formulation. This anti-fungal agent is  
32 undecylenic acid in the preferred embodiment.

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